**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 18-28: **Network hardware and software**

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**Network hardware and software**

**Network Operating systems**

1. Describe the role of the network operating system.

The network operating system is software that controls traffic on the network and defines how devices will communicate with each other. A network operating system usually has two components – server software and client software.

1. What are the typical tasks of network server software?

Network server software is installed on the network servers and performs tasks such as controlling file access, managing print queues, keeping track of users through their UserIDs and passwords, authenticating access to network servers and maintaining a log of network usage and problems.

1. What is the role of network client software?

Network client software is installed on each workstation and establishes a connection, through the network interface card, between the workstation and other devices on the network.

1. List the 3 providers of network operating systems.

There are three significant providers of network operating systems used with personal computers – Microsoft windows vista, windows 7 and windows server 2008; Novell and Apple.

**Web client software**

1. List the typical client software

Web client software includes web browsers, electronic mail, videoconferencing and instant messaging.

**Software for setting up websites**

1. Describe the role of http protocol.

Hypertext transfer protocol (http) is a standard used for transmitting and receiving information on the internet. all servers and computers on the internet must follow the request and response procedure established in the http protocol so that information flows easily and quickly between servers and clients. The http protocol is used to access pages written in hypertext markup language (html)

1. What is the role of web server software?

Web server software provides content using the http protocol. The content is usually in the form of html documents, images or other resources. There are many examples of web server software. Popular ones include; Apache and Microsoft Internet Information Services (IIS).

1. What is the role of a proxy server?

A proxy server can be used to sit between the client and the rest of the internet. when a client’s browser requests a page to be loaded, the request can go to a proxy server that substitutes its IP address for that of the client.

* 1. What are the advantages of using a proxy server?

There are many advantages of using a proxy server. First, the client machine can exchange data with the remote server without making a direct connection. A second advantage is when the proxy server itself is able to serve the request made by the client, it will not contact the remote server any more. So the load on the remote server will be reduced by using a proxy server.

1. Describe the role of the following software:
   1. SMTP simple mail transfer protocol is used on electronic mail servers to handle the sending and receiving of client emails.
   2. POP3 Post Office Protocol server is used to store messages.
   3. FTP File transfer protocol software enables the uploading and downloading of files between computers on the internet.
   4. Web software applications wen software applications are programs designed for use on a website and include blogging software, forums and wikis.

**Cross-platform web software**

1. What is meant by a Cross-platform application? List egs.

Rather than depending on the microprocessor and operating system of the computer, a cross-platform application uses an execution engine and compile with libraries so that it runs identically on all machines. Examples of cross-platform software applications used in creating websites are Flash and Java.

1. What is adobe flash?

Adobe Flash is a software tool that enables website developers to combine interactive content with text, three-dimensional graphics, audio and video. Animation and interactive tools, as well as high embed in their webpages. These features can be implemented by all browsers and across all computer platforms.

**Network Hardware**

Describe the characteristics and role of the following network hardware devices:

1 Network interface card – a network interface card (NIC) is used to link a computer or resource to a network. The NIC is connected to the network by wires, radio waves, infra-red light waves, microwave or fibre-optic cable.

2 Wireless access point – a wireless access point (AP) is used to connect wireless communication devices to a wired or wireless network. Often, an AP is connected to a wired Ethernet network, which allows it to relay data between devices on each side of the AP (wired network on one side and wireless devices on the other).

3 Switches – a switch is a device that stores the address of every device down each wire leading from the switch. When a devices talks to a switch, the first packet is examined for the destination device’s media controller access (MAC) address.

4 Routers – a router is a communications device that allows several remote LANs to connect over a WAN, or to join a number of LANs into one bigger LAN.

5 modems – a modem is a device that is used to send a computer’s digital signal over a telephone line.

For each of the following modem types, in a table indicate the following:

|  |  |
| --- | --- |
| Modem | Download Speed |
| Dial-up modem | 56 kbps |
| Digital modem | 56 kbps |
| ADSL | 8 Mbps |
| ADSL & ADSL 2 + | 20 Mbps |
| Cable modems | 30 Mbps |

6 How does a digital modem differ from a dial-up modem?

Dial-up modem – an external modem is a stand-alone (separate) device that attaches to a special serial port, such as RS-232, on a computer with a standard telephone cord connected to a telephone outlet.

Digital modem – in you access the internet using an ADSL connection, you need a communications device to send and receive the digital ADSL signals.